

# RADIATE AND ERADIATE INDIVIDUALS IN *GRINDELIA NUDA* (ASTERACEAE)

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*Grindelia nuda* Wood var. *nuda* is a common rayless taxon of central Texas. However, a population exhibiting both radiate and eradiate heads exists in NW Hays County in central Texas. I first noted this when plants cultivated from seeds collected from rayed plants produced both rayed and rayless individuals (Figs. 1 and 3; scales represent mm). Subsequent inspection of the locale, along a quarter mile of county road, revealed roughly a dozen specimens of each type. The two types typically did not grow together. Additionally, one individual from my planting was essentially "subradiate," with rays varying in length from 1–4 mm (Fig. 2), in contrast to rays of 10–14 mm on regular radiate plants.

Voucher specimens (verified by B. L. Turner): **TEXAS. Hays Co.:** NW part of county on roadside immediately above Deadman's Hole, 27 Oct 2000, *Harms 11* (rayless) & *Harms 12* (rayed) (TEX).

Since the presence or absence of rays is emphasized in recent keys for Texas *Grindelia* (e.g., Diggs et al. *Shinners & Mahler's illustrated flora of North Central Texas*, 1999), a revision for the key seems in order, perhaps utilizing achene morphology as a distinguishing feature following G. Nesom, *Phytologia* 68:304, 1990:

Besides the presence of ray flowers, at least the Great Plains forms of *G. squarrosa* differ from *G. nuda* in the production of dimorphic achenes: the ray and outer disc achenes of *G. squarrosa* are smooth and compressed but slightly 3–4 angled, while the inner disc achenes are longer than the outer, strongly compressed and 2 angled, and have numerous superficial, longitudinal nerves; the achenes of *G. nuda* are monomorphic, all smooth or developing shallow furrows late in their maturation.

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FIG. 1. Radiate *Grindelia nuda*.

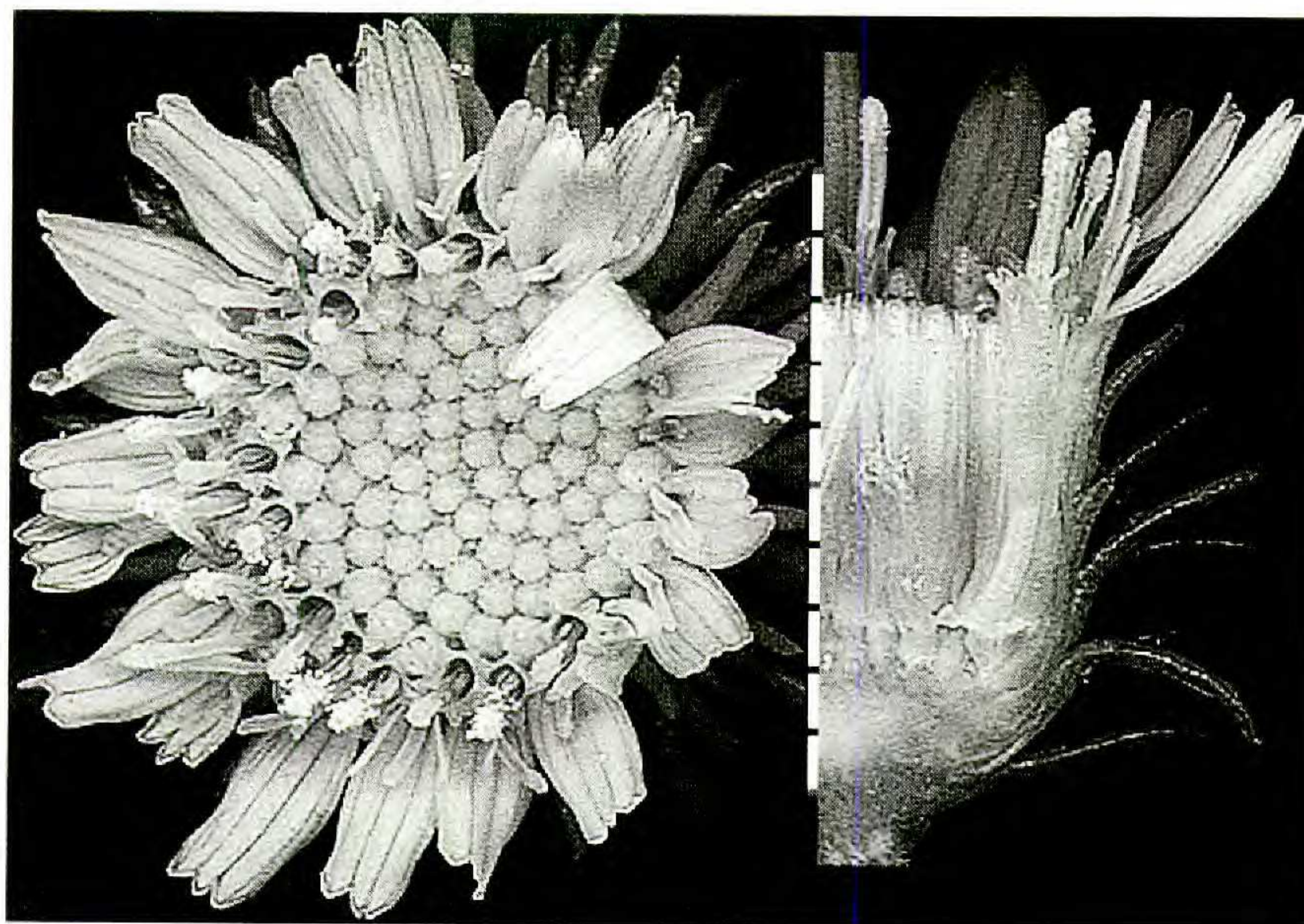


FIG. 2. "Subradiate" *Grindelia nuda*.

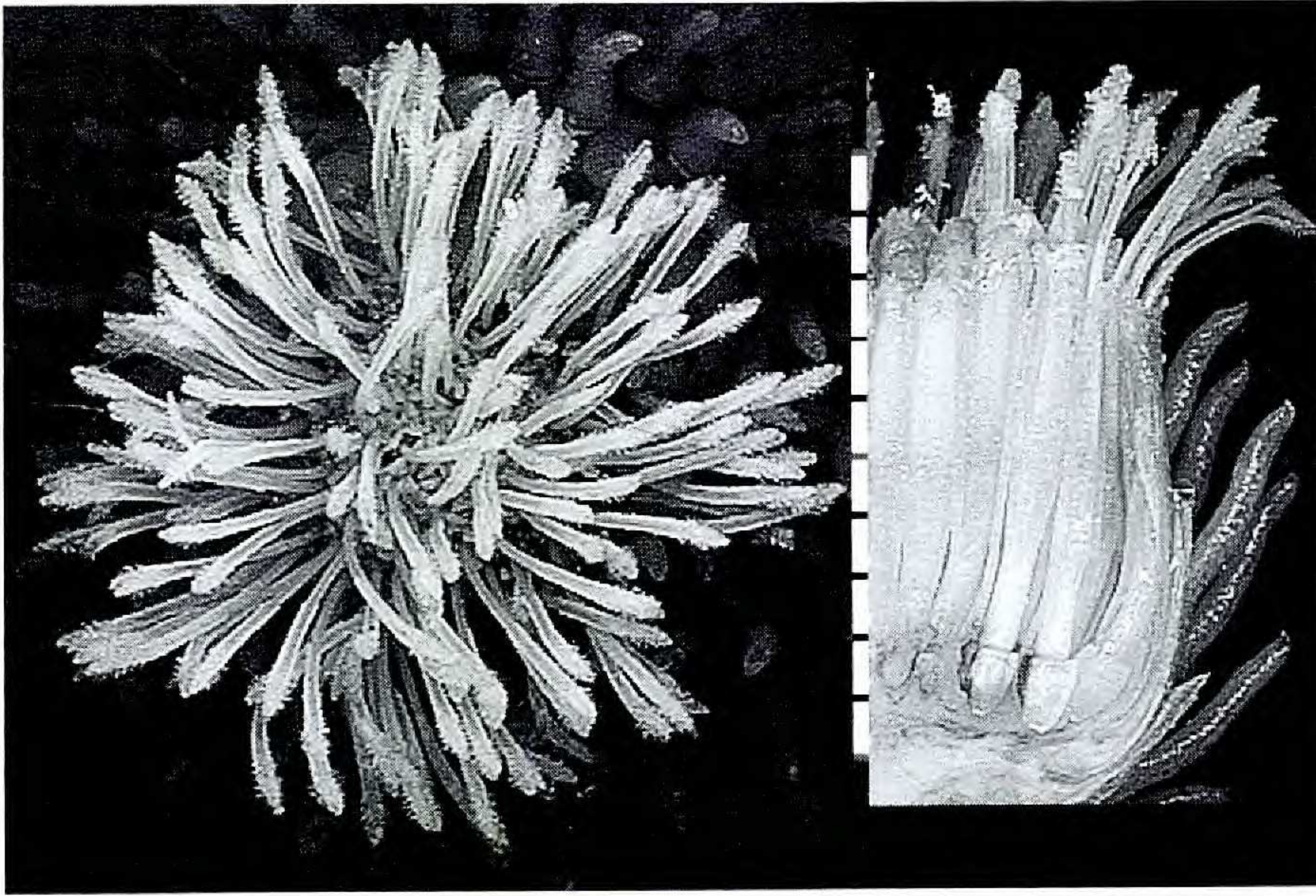


FIG. 3. Eradiate *Grindelia nuda*.